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Filing Date	August 13, 2001
First Named Inventor	Stephen F. Gass
Art Unit	3724
Examiner Name	Boyer D. Ashley
Attorney Docket Number	SDT 311

ENCLOSURES (Check all that apply)

- ☐ Fee Transmittal Form
- ☐ Fee Attached
- ☐ Amendment/Reply
- ☐ After Final
- ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
- ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
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- ☐ Petition
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- ☐ Appeal Communication to Board of Appeals and Interferences
- ☑ Appeal Communication to TC (Amended) (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks

The attached Appeal Brief (Amended 4-18-06) responds to the Notification of Non-Compliant Appeal Brief mailed April 12, 2006.

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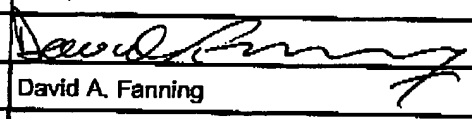
Signature			
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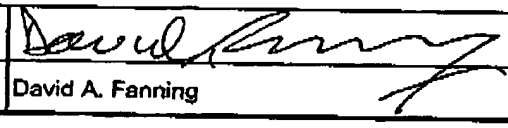
Signature			
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
STEPHEN F. GASS and DAVID A. FANNING

Date: January 24, 2006
(amended April 18, 2006)

Serial No.: 09/929,425

Examiner Boyer D. Ashley

Filed: August 13, 2001

Group Art Unit 3724

For: TRANSLATION STOP FOR USE IN POWER EQUIPMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPEAL BRIEF (AMENDED 4-18-06)

1. Real party in interest.

The real party in interest is SD3, LLC, the assignee of the above-identified application. SD3 is a privately owned Oregon limited liability company.

2. Related appeals and interferences.

All other known prior and pending appeals, interferences or judicial proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal are listed below. These appeals are listed because SD3, LLC is the real party in interest and the appeals relate to various aspects of safety systems for power equipment. The currently pending appeals are:

1. Appeal of application serial number 09/929,221 (appeal brief filed, awaiting examiner's answer).
2. Appeal of application serial number 09/929,227 (appeal brief filed, awaiting examiner's answer).

3. Appeal of application serial number 09/929,238 (appeal brief filed, awaiting examiner's answer).
4. Appeal of application serial number 09/929,242 (appeal brief filed, awaiting examiner's answer).
5. Appeal of application serial number 10/053,390 (appeal reinstated after examiner reopened prosecution, a new appeal brief has been filed, awaiting examiner's answer).
6. Appeal of application serial number 10/100,211 (appeal brief filed, awaiting examiner's answer).
7. Appeal of application serial number 10/189,027 (appeal brief filed, awaiting examiner's answer).
8. Appeal of application serial number 10/189,031 (appeal brief filed, awaiting examiner's answer).

Applicant has also filed appeals in applications 09/929,240, 09/929,426, 10/053,390, 10/243,042 and 10/292,607, but those applications have either been allowed or prosecution has been reopened, so the appeals are no longer pending. Applicant identifies these prior appeals because the applications involved may be related to the present application.

3. Status of claims.

The application was filed with claims 1-16 and claims 17-28 were added during prosecution. Claims 5, 6, 8, 24 and 25 were withdrawn and claims 10-16 and 26-28 were cancelled without prejudice. Claims 1-4, 7, 9 and 17-23 are rejected. The appealed claims are claims 1-4, 7, 9 and 17-23.

4. Status of amendments.

All amendments have been entered.

5. Summary of claimed subject matter.

Independent claim 1 describes a woodworking machine with a cutting tool that moves into a cutting zone to cut a workpiece. The woodworking machine may be, for example, a radial arm saw as shown in Figure 3 of the application or a miter saw as shown in Figure 4. In a radial arm saw a user pulls a blade into the cutting zone to cut a workpiece resting in the cutting zone (as discussed in paragraph 26 of the published specification and on page 12, line 20 to page 13, line 7 in the specification as submitted). In a miter saw a user pivots a blade down into a cutting zone to cut a workpiece resting on a base or stand (as discussed in paragraph 30 of the published specification and on page 15, lines 10-12 in the specification as submitted). The woodworking machine of claim 1 includes a support structure having a cutting zone (which in a radial arm saw may include one or more of a base 1102, a vertical support column 1104, a guide arm 1106 and a carriage 1108, as discussed in paragraph 26 of the published specification, or in a miter saw may include a base 1152 and swing arm 1154, as discussed in paragraph 30 of the published specification). The woodworking machine also includes a cutting tool (such as blades 1114 and 1158) supported by the support structure and the cutting tool is adapted to move into the cutting zone to cut a workpiece. A motor is adapted to drive the cutting tool (such as motor assembly 1112). The woodworking machine also includes a detection system adapted to detect contact between a person and the cutting tool (such as detection subsystem 22 discussed in paragraph 17 of the published specification and on page 17, lines 7-22 in the

specification as submitted), and a reaction system adapted to stop motion of the cutting tool into the cutting zone upon detection of contact (such as reaction subsystem 24 discussed in paragraphs 14, 15, 27, 28, 32-34, and other locations in the published specification and on pages 5, 6, 13, 14, 16, 17 and other locations in the specification as submitted). The detection and reaction systems work to minimize injury if a person accidentally contacts the cutting tool. For example, if a person using a radial arm saw accidentally pulls the blade into contact with his hand as he holds a workpiece in place, or if the blade unexpectedly accelerates or "climbs" past the workpiece into contact with the user's hand, then the detection system detects the contact and the reaction system stops the motion of the blade into the cutting zone to minimize any injury.

Independent claim 7 also describes a woodworking machine adapted to minimize the potential for serious injury when using the machine. The machine includes a cutter adapted to move translationally relative to a workpiece, a detection system adapted to detect contact between a person and the cutter, and a reaction system adapted to interrupt the translational movement if contact is detected. The radial arm saw and miter saw discussed above are examples of saws constructed in this manner.

Independent claim 17 describes a woodworking machine having a base configured to rest on a generally horizontal surface, a work surface supported by the base, a work zone adjacent the work surface, and a blade adapted to move into the work zone to cut a workpiece. A motor is included to drive the blade. The machine includes a detection system to detect contact between a person and the blade and a reaction system adapted to limit movement of the blade into the work zone upon

detection of contact. As with claims 1 and 7, the radial arm saw and miter saw discussed above are examples of saws constructed as set forth in this claim.

6. Grounds of rejection to be reviewed on appeal.

The grounds of rejection presented for review are:

1) a provisional, obviousness-type double patenting rejection of claims 1, 2, 4, 7, 9, 17-20 and 23 in light of co-pending application 09/676,190 combined with Yoneda (US Patent 4,117,752);

2) a rejection of claims 1-4, 7, 9, 17 and 20-22 under 35 USC 103(a) as obvious in light of Gaines (US Patent 5,052,255) combined with Lokey (US Patent 3,785,230) or Friemann (US Patent 3,858,095); and

3) a rejection of claims 1, 17, 18 and 23 under 35 USC 103(a) as obvious in light of Suzuki (US Patent 5,791,224) or Brundage (US Patent 4,934,233) combined with Gaines or Terauchi (US Patent 4,512,224) and Lokey or Friemann.

7. Argument.

Obviousness-Type Double Patenting

Claims 1, 2, 4, 7, 9, 17-20 and 23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting in light of claims 25-30 and 35-40 of co-pending application 09/676,190 combined with Yoneda (US Patent 4, 117,752). Claim 38 from the co-pending application has been cancelled without prejudice so the rejection based on that claim is moot. The remaining cited claims from the co-pending application have been allowed.

The purpose of an obviousness-type double patenting rejection is "to prevent the extension of the term of a patent, even where an express statutory basis for the

rejection is missing, by prohibiting the issuance of the claims in a second patent not patentably distinct from the claims of the first patent." In re Longi, 759 F.2d 887, 892, 225 USPQ 645 (Fed. Cir. 1985). The policy behind the rejection is as follows:

> The public should ... be able to act on the assumption that upon expiration of the patent it will be free to use not only the invention claimed in the patent but also modifications or variants thereof which would have been obvious to those of ordinary skill in the art at the time the invention was made, taking into account the skill of the art and prior art other than the invention claimed in the issued patent." In re Zickendraht, 319 F.2d 225, 232, 138 USPQ 23, 27 (CCPA 1963) (Rich, J., concurring).

The test to determine the propriety of an obviousness-type double patenting rejection is "whether the claimed invention in the application for the second patent would have been obvious from the subject matter of the claims in the first patent, in light of the prior art." Longi, 759 F.2d at 893 (citing Carman Industries Inc. v. Wahl, 724 F.2d 932, 940, 220 USPQ 481, 487 (Fed. Cir. 1983). The standard guidelines for an obviousness analysis under 35 USC 103 govern this test. Longi, 759 at 892 n.4.

Applying this test to the claims at hand shows there is no double patenting because, in order to for the claims to be obvious in light of the cited references under 35 USC 103, the references must teach or suggest all the limitations from the claims and they do not. See, e.g., 35 USC 103(a) (question is whether "the subject matter *as a whole* would have been obvious"); Application of Royka, 490 F.2d 981, 985 (CCPA 1974) (claim not obvious because limitation missing from cited references); Application of Wilson, 424 F.2d 1382, 1385 (CCPA 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art."); MPEP 2143.03 ("To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.")

Claims 1, 2, 4, 20 and 23

Claims 1, 2, 4, 20 and 23 in the present application all require "a reaction system adapted to stop motion of [a] cutting tool into [a] cutting zone upon detection of contact between a person and the cutting tool by [a] detection system." The examiner says the cited claims from the co-pending application disclose this limitation (Office Action mailed 8/25/05, p.2), but they do not. The cited co-pending claims disclose a system that uses the angular momentum of a cutting tool, or the engagement of a brake mechanism with the cutting tool, to *urge* the cutting tool away from a cutting zone (co-pending claims 25-30 and 35-37) or to *create an impulse* against movement of the cutting tool into the cutting zone (co-pending claims 39 and 40). The cited co-pending claims do not specify a reaction system to *stop* the motion of a cutting tool into a cutting zone, as is evident from reading the cited claims.[1] Urging a moving object away from a work surface, or creating an impulse against movement, are different than stopping the movement of an

[1] Co-pending claim 25 is representative, and it reads as follows:

> 25. A saw comprising:
> a base configured to rest on a generally horizontal surface to support the saw during operation;
> a work surface supported by the base above the generally horizontal surface on which a workpiece may be cut;
> a rotatable blade adapted to cut a workpiece on the work surface, where the blade has an angular momentum when rotating;
> an axis around which the blade rotates;
> a motor to drive the blade;
> a detection system configured to detect a dangerous condition between a person and the blade; and
> a reaction system including a brake to decelerate the blade upon detection of the dangerous condition between the person and the blade, where the reaction system is configured to use at least a fraction of the angular momentum of the blade to generate a force tending to urge the axis around which the blade rotates away from the work surface when the brake decelerates the blade.

object. For example, the current of a river can urge a boat downstream, or a log floating in the river can strike the boat and create an impulse against movement, but the boat may still move upstream without stopping. Because of this difference, neither "urging" nor "creating an impulse" discloses "stopping." cf. In re Vogel and Vogel, 164 USPQ 619 (CCPA 1970) ("pork" does not disclose "beef" in a method for prolonging the storage life of packaged meat products). This distinction contributes to the claims in the present application having a scope of coverage different than the cited co-pending claims, and that difference supports a conclusion of non-obviousness. See General Foods Corp. v. Studiengesellschaft Kohle mbH, 23 USPQ2d 1839, 1843 (Fed. Cir. 1992) ("Anything less than a process with all 9 steps is not what is claimed, and is, therefore, not patented."); In re Stanley and Lowe, 102 USPQ 234, 240 (CCPA 1954) (appealed claims were distinguishable from improvement claims because the improvement claims included additional limitations).

The examiner said he recognized the differences between "stopping," "urging" and "creating an impulse," but he maintained his rejection with the following reasoning:

> Although, the examiner appreciates applicant's intent of the claim language it should be noted that the phrase, e.g., claim 1, "...adapted to stop motion of the cutting tool into the cutting zone ..." is nonetheless anticipated by a reaction system which *reverses* the movement of the tool relative to the cutting zone because the tool would be stop [sic] from continuing into the cutting zone. Nothing in the instant claims prevent this interpretation nor does the examiner believe it is unreasonable. (Office Action mailed 8/25/05, pp.4-5, emphasis added.)

The examiner may be correct that reversing the movement of a cutting tool anticipates stopping, but the examiner is incorrect in saying the cited co-pending claims disclose reversing the movement of a cutting tool. As stated above, co-pending claims

25-30 and 35-37 urge a cutting tool or blade away from a work surface or cutting region and claims 39 and 40 create an impulse against movement of a blade into a cutting zone. None of the cited co-pending claims disclose reversing the movement of a cutting tool. Accordingly, the examiner's maintenance of the rejection is based on a misunderstanding of the co-pending claims.

Claims 7 and 9

Claims 7 and 9 in the present application require "a reaction system adapted to interrupt the translational movement of the cutter upon detection of contact between the person and the cutter by the detection system." None of the cited co-pending claims disclose this limitation. As explained, the cited co-pending claims urge a blade away from a cutting zone or create an impulse against movement of the blade into the cutting zone. They do not disclose interrupting movement of the cutter.

Claims 17-19

Claims 17-19 in the present application require "a reaction system adapted to limit movement of the blade into the work zone upon the detection of the contact." Again, the cited co-pending claims urge a blade away from a cutting zone or create an impulse against movement of the blade into the cutting zone; they do not disclose a reaction system adapted to limit movement of the blade into the work zone.

In summary, the cited references fail to disclose or suggest reaction systems as set forth in applicant's claims, and therefore, the obviousness-type double patenting rejection should be reversed.

Obviousness under 35 USC 103(a)

I. Rejection of claims 1-4, 7, 9, 17 and 20-22 in light of Gaines with Lokey or Friemann.

A. Claims 1-4, 20 and 22.

Claims 1-4, 20 and 22 were rejected under 35 USC 103(a) as obvious in light of Gaines (US Patent 5,052,255) combined with Lokey (US Patent 3,785,230) or Friemann (US Patent 3,858,095). Gaines discloses a speed brake for a radial arm saw. The speed brake limits the movement of the blade toward the user when the blade "moves faster than the predetermined safe speed." (Gaines, column 3, lines 59-60.) In other words, if the blade in a radial arm saw unexpectedly accelerates toward the user, from "climbing" over a workpiece, for example, the speed brake disclosed in Gaines will impede that movement. The speed brake includes either a hydraulic cylinder with leaf springs that flex to limit the flow of hydraulic fluid in the cylinder when the cylinder accelerates too fast (Gaines, column 4), or centrifugally driven locking members that move outwardly due to centrifugal force when the blade accelerates toward a user faster than expected (Gaines, column 5, lines 19-25, column 6, lines 8-10 and 50-56). Limiting the flow of hydraulic fluid or moving locking members outwardly prevents the blade from advancing faster than the predetermined safe speed. Gaines, however, does not disclose or suggest any system to detect contact between a person and the blade, so the examiner cites Lokey and Friemann as disclosing various detection systems. Lokey discloses a system to detect proximity between a person and a circular saw blade and Friemann discloses a system to detect contact between a person and a band saw blade. The examiner rejects applicant's claims by saying it would have been

obvious to modify Gaines to include a detection system as taught by Lokey or Friemann. (Office Action mailed 8/25/054, p.3, and Office Action mailed 7/15/04, p.5.)

The Board should reverse the rejection because: 1) the cited references fail to teach or suggest all claim limitations, 2) there is no suggestion to combine the references, and 3) there is no reasonable expectation that the combination suggested by the examiner would work. Each of these points is an independent reason why the Board should reverse the obviousness rejection. Each point is addressed below.

1. The cited references fail to teach or suggest all claim limitations.

The cited references must teach or suggest all of the limitations from the claims in order for the claims to be obvious in light of those references. See, e.g., 35 USC 103(a) (question is whether "the subject matter *as a whole* would have been obvious"); Application of Royka, 490 F.2d 981, 985 (CCPA 1974) (claim not obvious because limitation missing from cited references); Application of Wilson, 424 F.2d 1382, 1385 (CCPA 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art."); Manuel of Patent Examining Procedure, 2143.03 [hereinafter MPEP] (8th Ed., latest revision Oct. 2005) ("To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.") The cited references, however, fail to teach or suggest "a reaction system adapted to stop motion of the cutting tool into the cutting zone upon detection of contact between a person and the cutting tool by the detection system," as required by the claims. Therefore, the combination of cited references cannot render the claims obvious.

Gaines does not show or suggest any system that can stop the movement of a cutting tool into a cutting zone *upon detection of contact* between the person and the cutting tool. Instead, as explained above, Gaines shows a speed brake having either a hydraulic cylinder with leaf springs or centrifugally driven locking members that limit the movement of a blade toward a user when the blade "moves faster than the predetermined safe speed." (Gaines, column 3, lines 59-60.) Those mechanisms are actuated by acceleration - it is acceleration that causes the leaf springs to flex to limit the flow of hydraulic fluid or that causes the locking members to move outwardly. There is no way to actuate the speed brake disclosed in Gaines based on contact between a person and the cutting tool because that contact will not flex the leaf springs or create a centrifugal force to move the locking members outwardly. Therefore, the cited references do not disclose a reaction system as required by claims 1-4, 20 and 22.

Applicant explained this point to the examiner, and the examiner even agreed "that the mechanism[s] for performing the different functions of Lokey, Friemann and Gains [sic] are different." (Office Action mailed 8-26-05, p. 5.) Nevertheless, the examiner maintained his rejection because he said claims 1-4 are defined by function, and "it is hard for the examiner [to] believe that the combinations are incapable of the functions." Id. Specifically, the examiner said:

> Applicant contends that the detection systems used by Lokey and Friemann do not work with brakes triggered by acceleration like in Gains [sic] and therefore the combinations are not obvious. Applicants [sic] comments are fully understood; however, the examiner respectfully disagrees for the following reasons. Although it is true that the mechanism for performing the different functions of Lokey, Friemann and Gains [sic] are different[,] applicant has not claimed any structure. Applicant is attempting to claim in very broad terms the functions of his devices without any structure that allows for his device to function in

> those terms. In this regard, it is hard for the examiner [sic] believe that the combinations are incapable of the functions. How is the reaction system adapted to stop the motion of the tool into the cutting zone? What prevents them, Lokey, Friemann, and Gains [sic], from functioning in this same manner? One of ordinary skill in the art could readily modify Gains [sic] to stop for any number of reasons. (Office action mailed 8-25-05, p. 5.)

The examiner's reasoning is incorrect. First, applicant points out that functional language is permitted in claim drafting and a limitation expressed in functional language must be evaluated and considered just like any other limitation in the claim. See, e.g., Wright Medical Technology, Inc. v. Osteonics Corp., 122 F.3d 1440, 1444, 43 USPQ2d 1837 (Fed. Cir. 1997) (interpreting the phrases "adapted to closely fit in and extend through the narrowest portion of the human femur" and "such that the central long axis of said femur passes through the central long axis of said intramedullary rod portion"); In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971) ("We take the characterization 'functional', as used by the Patent Office and argued by the parties, to indicate nothing more than the fact that an attempt is being made to define something ... by what it does rather than by what it is ... . In our view, there is nothing intrinsically wrong with the use of such a technique in drafting patent claims. Indeed we have even recognized in the past the practical necessity for the use of functional language."); MPEP 2173.05(g) ("A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.").

A functional limitation is not limited to specific structure; in fact, that is often the very reason why functional language is used. Sometimes the best way to define an invention is to use functional language, and applicant believes that is the case with the

invention described by the claims at issue. The risk of using functional language, however, is that any mechanism capable of functioning as specified will meet the limitation. But using functional language does not change the test used to determine obviousness, nor does it change what the prior art teaches. There still must be some prior art mechanism capable of functioning as specified in order to reject applicant's claims as obvious. Without such a mechanism, the functional language distinguishes the prior art.

Thus, the question at hand is whether the speed brake disclosed in Gaines can be modified in light of the teachings of Lokey or Friemann to stop the movement of the cutting tool into the cutting zone upon detection of contact between a person and the cutting tool, as specified in applicant's claims. The answer to that question is no, it cannot, because the speed brake of Gaines requires acceleration to operate and detecting contact does not provide acceleration. Triggering due to acceleration is a different principle of operation than triggering due to contact and that different principle of operation precludes the modification of Gaines in light of the teachings of Lokey or Friemann. The examiner did not respond to this explanation by identifying how the speed brake of Gaines could be modified to achieve the required function. Instead, the examiner simply rejected the claims by saying "it is hard for the examiner [to] believe that the combinations are incapable of the functions." (Office Action mailed 8-25-05, p. 5.) The examiner's belief, however, is insufficient to support an obviousness rejection, especially given applicant's explanation of why that belief is mistaken. Rather than simply expressing his belief, the examiner should have explained how the speed brake

of Gaines could be modified in light of the teachings of Lokey and Friemann to stop the blade upon detection of contact between a person and the blade, but he did not.

The examiner is also incorrect when he says one of ordinary skill "could readily modify Gain[es] to stop for any number of reasons." There simply is no support for that statement. Unexpected acceleration is the only event disclosed by Gaines to trigger his speed brake. (Gaines, column 3, lines 57-68.) There is no disclosure of any other event capable of causing the speed brake of Gaines to operate. The examiner's unsupported assertion is an insufficient basis for an obviousness rejection.

Finally, the examiner's question about how applicant's reaction system is adapted to stop the motion of the tool into the cutting zone is irrelevant to the question of whether the cited references disclose such a reaction system. Nevertheless, the examiner's question is easily answered by referring to applicant's specification, where various reaction systems are disclosed and depicted.

2. There is no suggestion to combine the references.

Even if the cited references disclose all of the limitations in claims 1-4, 20 and 22, the claims still would not be obvious because there is no teaching, suggestion or motivation in the prior art to combine Gaines with Lokey and/or Friemann. Without such a teaching, suggestion or motivation, the obviousness rejection cannot stand. In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453 (Fed. Cir. 1998). Additionally, the suggestion to combine references "must be founded in the prior art, not in the applicant's disclosure." In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438 (Fed. Cir. 1991).

The requirement for a suggestion to combine references is explained by the case of In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453 (Fed. Cir. 1998). In that case the Board of Patent Appeals and Interferences affirmed the rejection of an application concerning a satellite communication system. The application addressed the problem of how to keep a receiver on the earth in communication with a satellite moving around the earth. Typically, a satellite transmits multiple signal beams to the earth and a receiver must switch from one beam to another as the satellite moves. This switching from beam to beam is referred to as a handover, and a disruption in communication is more likely during a handover. Rouffet minimized the number of handovers required by changing the shape of the transmitted beams from cones to fans. Fan-shaped beams have elliptical footprints that extend parallel to the direction of a satellite's motion. The elliptical footprints help ensure that a fixed point on the earth will remain within the satellite's beam. Id. at 1353.

The examiner rejected Rouffet's claims as obvious in light of a patent to King, a patent to Rosen, and a conference report by Ruddy. King disclosed a system to launch a plurality of low-orbit satellites. Rosen disclosed a geostationary satellite using fan-shaped beams oriented in an east-west direction. Ruddy disclosed a television broadcast system that transmitted a single fan-shaped beam upward from the earth into which satellites would successively enter. This fan-shaped beam was oriented so its long axis was aligned with the long axes of the satellites' orbits. Id. at 1356. The Board affirmed the examiner's rejection and added an alternative rejection based on the combination of two other patents. Rouffet then appealed to the Federal Circuit.

On appeal, the Federal Circuit found no error in the Board's conclusion that "the combination of King, Rosen, and Ruddy contains all of the elements claimed in Rouffet's application." Id. at 1357. Nevertheless, the Federal Circuit concluded "the Board reversibly erred in determining that one of skill in the art would have been motivated to combine these references in a manner that rendered the claimed invention obvious." Id. The Federal Circuit said the Board erred by failing to identify any specific understanding or scientific principle suggesting the combination. The court explained that an examiner cannot simply find claim elements in the prior art and then combine them to arrive at the invention because such an approach would allow hindsight to influence the determination. Rather, an examiner must find the claim elements in the prior art and then specify how the prior art suggests or motivates the combination of those elements. This is explained in the following discussion from Rouffet:

> As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. V. Union Oil Co.*, 713 F.2d 693, 698, 218 U.S.P.Q. 865, 870 (Fed. Cir. 1983); *see also Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 U.S.P.Q. 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements.") Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 U.S.P.Q.2d 1551, 1554 (Fed. Cir. 1996).
>
> To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and

> with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.
>
> This court has identified three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. In this case, the Board relied upon none of these. Rather, just as it relied on the high level of skill in the art to overcome the differences between the claimed invention and the selected elements in the references, it relied upon the high level of skill in the art to provide the necessary motivation. The Board did not, however, explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination. Instead, the Board merely invoked the high level of skill in the field of art. If such a rote invocation could suffice to supply a motivation to combine, the more sophisticated scientific fields would rarely, if ever, experience a patentable technical advance. Instead, in complex scientific fields, the Board could routinely identify the prior art elements in an application, invoke the lofty level of skill, and rest its case for rejection. To counter this potential weakness in the obviousness construct, the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness.
>
> Because the Board did not explain the specific understanding or principle within the knowledge of a skilled artisan that would motivate one with no knowledge of Rouffet's invention to make the combination, this court infers that the examiner selected these references with the assistance of hindsight. This court forbids the use of hindsight in the selection of references that comprise the case of obviousness. *See In re Gorman,* 933 F.2d 982, 986, 18 U.S.P.Q.2d 1885, 1888 (Fed.Cir.1991). Lacking a motivation to combine references, the Board did not show a proper *prima facie* case of obviousness. This court reverses the rejection over the combination of King, Rosen, and Ruddy. (Rouffet, 149 F.3d at 1357-1358.)

This discussion is pertinent to the case at hand because the examiner in the present application did not identify any specific understanding or technological principle that would motivate a person of ordinary skill to select the various elements from the prior art and arrange them as set forth in applicant's claims, just as the examiner in Rouffet failed to identify any such understanding or principle. The examiner in the case

at hand simply said it would have been obvious to combine the references "to prevent further and serious injury to the user." (Office Action mailed 7/15/04, p.5.) But there is no support in the cited references for that conclusion. To the contrary, if there is a risk that a cutting tool could contact a person because of unexpected acceleration, as suggested by Gaines, then it would be better to stop the cutting tool at the time of the unexpected acceleration rather than at the time of contact. Additionally, if it were possible to combine the cited references, it would be better to equip the speed brake of Gaines with the proximity detection system of Lokey because that system would also stop the cutting tool before contact with the user.[2] If Gaines and Lokey suggest what could be safer alternatives, then why would a person of ordinary skill in the art want modify Gaines to include a reaction system adapted to trigger upon contact as specified in applicant's claims? Where is the support for the examiner's proffered motivation?

The examiner's motivation "to prevent further and serious injury to the user" is simply a rote invocation of the desire for safer products used to justify the combination of references, just as the reliance on a high level of skill was a rote invocation used to justify the combination of references in Rouffet. As explained by the Federal Circuit, such rote invocations cannot provide the required motivation because then there would rarely be any patentable technical advance. Instead, a specific suggestion to make a combination is required, and that requirement must be diligently applied because, as the Federal Circuit has said, "invention itself is the process of combining prior art in a

[2] Lokey discloses a system to detect proximity of a hand to a blade, not contact of the hand with the blade. (Lokey, column 1, lines 11-14, column 2, lines 16-31.)

nonobvious manner." Id. at 1359. In the case at hand, the examiner failed to identify any specific suggestion to make the combination.

Another case explaining the requirement of a specific suggestion to combine references is In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (citations omitted), *abrogated on other grounds* in In re Gartside, 203 F.3d 1305, 53 USPQ2d 1769 (Fed. Cir. 2000). In that case the Board of Patent Appeals and Interferences affirmed the rejection of an application concerning a trash bag made to look like a jack-o'-lantern when filled with leaves or trash. The application was rejected in light of conventional plastic trash bags combined with orange crepe paper jack-o'-lanterns (referred to as the Holiday reference) and paper bag pumpkins (referred to as the Shapiro reference). The Federal Circuit reversed the rejection because the Board did not identify a suggestion to make the combination. The Federal Circuit explained,

> [R]ather than pointing to specific information in Holiday or Shapiro that suggest the combination with the conventional bags, the Board instead described in detail the similarities between the Holiday and Shapiro references and the claimed invention, noting that one reference or the other – in combination with each other and the conventional trash bags – described all of the limitations of the pending claims. ... Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the children's art references (Holiday and Shapiro) with the conventional trash or lawn bag references, nor does the Board make specific – or even inferential – findings concerning the identification of the relevant art, the level of ordinary skill in the art, the nature of the problem to be solved, or any other factual findings that might serve to support a proper obviousness analysis. ...
>
> ...Yet this reference-by-reference, limitation-by-limitation analysis fails to demonstrate how the Holiday and Shapiro references teach or suggest their combination with the conventional trash or lawn bags to yield the claimed invention. ... Because we do not discern any finding by the Board that there was a suggestion, teaching, or motivation to combine the prior art references cited against the pending claims, the Board's conclusion of obviousness, as a matter of law, cannot stand. (Dembiczak, 175 F.3d at 1000.)

Just as in Dembiczak, the examiner in the case at hand made a reference-by-reference, limitation-by-limitation analysis without identifying any specific teaching or suggestion in the prior art to make the combination. In other words, the examiner simply found what he thought were the elements of applicant's claims, and then combined those elements according to applicant's teachings. As explained in Dembiczak, that type of analysis cannot support a conclusion of obviousness. The Federal Circuit clearly stated: "Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight." Id. at 999. In the case at hand, just as in Dembiczak, the examiner "fell into the hindsight trap." Id.

A factor that may be considered in determining whether the prior art suggests a particular combination is whether the combination would require a substantial reconstruction or change the principle of operation of the device being modified. If it would, then there is no suggestion to make the combination. This is explained by the case of In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). In that case, claims directed to an oil seal comprising a bore engaging portion with a resilient sealing member were rejected as obvious in light of a combination of references, including a primary reference with a more rigid seal. The court reversed the rejection, explaining that the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." Id. at 813, 123 USPQ at 352.

Ratti is analogous to the case at hand because the proposed combination of Gaines, Lokey and Friemann, if possible, would require a substantial reconstruction and redesign of the speed brake disclosed in Gaines and would change the principle of operation of the speed brake. As explained, the speed brake disclosed in Gaines operates on the principle that unexpected acceleration can trigger a brake. The proposed combination of Gaines with Lokey or Friemann would change that principle of operation because unexpected acceleration would no longer trigger the brake. Instead, an electric signal indicating the blade had approached or contacted the user would trigger the brake. How the electric signal would trigger the brake is unclear because the brake disclosed in Gaines cannot respond to an electric signal, and therefore, it would have to be redesigned. Thus, the resulting combination would employ a different principle of operation, namely, triggering a brake on detected proximity or contact instead of unexpected acceleration, and would require a substantial and undetermined reconstruction. These facts show there is no suggestion to make the combination, just as similar facts showed there was no suggestion to combine references in Ratti.

3. There is no reasonable expectation that the combination would succeed.

Even if the cited references disclosed all the limitations in the claims and suggested their combination, there still would have to be a reasonable likelihood that the combination would succeed. In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ2d (Fed. Cir. 1988) ("The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art."); see also MPEP 2143.02 ("Reasonable Expectation

of Success Is Required"). The obviousness rejection cannot stand without that expectation. Id.

In the case at hand, there is no reasonable expectation that the combination of Gaines with Lokey or Friemann would succeed because, as explained, the speed brake of Gaines is triggered by acceleration, not contact. If the combination were attempted, the resulting system would be inoperable. This situation is similar to the case of In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). In that case, Gordon appealed the rejection of claims to a blood filter. The blood filter included an inlet and an outlet, both located at the bottom of the filter. The claims were rejected as obvious in light of a strainer for removing dirt and water from gasoline and oil. The strainer included both an inlet and outlet, but they were located at the top of the strainer, not the bottom. The examiner and the Board concluded it would have been obvious to turn the strainer upside down to have the inlet and outlet at the bottom, and therefore they rejected the claims. The Federal Circuit reversed, explaining that the strainer relied "at least in part, upon the assistance of gravity to separate undesired dirt and water from gasoline and other light oils," so if the strainer "were turned upside down, it would be rendered inoperable for its intended purpose." Id. at 902. The case of Gordon is analogous to the case at hand because the speed brake of Gaines works by acceleration and would be rendered inoperable if modified to include the detection system of Lokey or Friemann, just as the strainer of Gordon worked by gravity and would be rendered inoperable if turned upside down.

B. Claims 7 and 9.

Claims 7 and 9 were rejected under 35 USC 103(a) as obvious in light of Gaines combined with Lokey or Friemann. Those claims describe a woodworking machine having a cutter adapted to move translationally relative to a workpiece, a detection system adapted to detect contact between a person and the cutter, and "a reaction system adapted to interrupt the translational movement of the cutter upon the detection of contact between the person and the cutter by the detection system." None of the cited references disclose a reaction system that works "upon the detection of contact," as explained. There is also no suggestion to combine the cited references, or a reasonable expectation that the combination would work, as explained. Therefore, the rejection of claims 7 and 9 should be reversed.

C. Claim 17.

Claim 17 was rejected under 35 USC 103(a) as obvious in light of Gaines combined with Lokey or Friemann. Claim 17 describes a woodworking machine with a base configured to rest on a surface, a work surface supported by the base, a work zone adjacent the work surface, a blade adapted to move into the work zone to cut a workpiece, a detection system adapted to detect contact between a person and the blade, and "a reaction system adapted to limit movement of the blade into the work zone upon the detection of the contact." None of the cited references disclose a reaction system that works "upon the detection of contact," as explained. There is also no suggestion to combine the cited references or a reasonable expectation of that the combination would work, as explained. Therefore, the rejection of claim 17 should be reversed.

D. Claim 21.

Claim 21 depends from claim 20, which in turn depends from claim 1. Therefore, claim 21 is not obvious for the same reasons as claims 1 and 20.

Claim 21 also requires "a wedge assembly configured to interrupt the sliding of [a] bracket along the arm" of a radial arm saw. None of the cited references disclose a wedge assembly. The examiner says claim 21 is obvious "for the reasons as set forth in paragraph 11 of action dated 7/12/04." (Office action mailed 8/25/05, p.3.) The action dated 7/12/04, however, did not address claim 21 because claim 21 was added in an amendment filed 10/12/04. Thus, the examiner has not set forth any basis for his rejection of claim 21. The rejection should be reversed because none of the cited references disclose the wedge assembly recited in the claim.

II. Rejection of claims 1, 17, 18 and 23 in light of Suzuki or Brundage with Gaines or Terauchi and Lokey or Friemann.

A. Claims 1 and 23.

Claims 1 and 23 were rejected under 35 USC 103(a) as obvious in light of Suzuki (US Patent 5,791,224) or Brundage (US Patent 4,934,233) combined with Gaines or Terauchi (US Patent 4,512,224) and Lokey or Friemann. Claim 1 describes a woodworking machine with detection and reaction systems as described above. Claim 23 depends from claim 1 and specifies that the woodworking machine is a miter saw.

Suzuki and Brundage each show a miter saw having a base and a blade that moves down to cut a workpiece positioned on the base. Neither reference discloses a detection system adapted to detect contact or a reaction system adapted to stop motion of a cutting tool into a cutting zone upon detection of contact, as required by claims 1

and 23. The examiner cites Gaines or Terauchi to show reaction systems adapted to stop the motion of a cutting tool into a cutting zone and he cites Lokey or Friemann to show detection systems.

The Board should reverse this rejection to the extent it relies on the combination of Gaines with Lokey or Friemann for the reasons given above. The Board should reverse this rejection to the extent it relies on Lokey because Lokey discloses a proximity detection system while applicant's claims require contact detection, and a proximity detection system teaches away from a contact detection system, as explained previously.

The Board should reverse the rejection to the extent it relies on Terauchi because 1) Terauchi is non-analogous art, 2) there is no suggestion to combine Terauchi with the other references, and 3) there is no reasonable expectation that the resulting combination would work. These points are discussed below.

1. Terauchi is non-analogous art.

The Board should reverse this rejection to the extent it relies on Terauchi because Terauchi is non-analogous art.[3] Terauchi discloses a slitter machine to cut fabric rolled onto a tube. The roll is held horizontal by a guide rod and the roll is rotated on the guide rod while a blade moves forward to cut the roll. The blade will advance until a limit switch contacts a stop, at which point the blade will move back. If the limit

[3] The first step in an obviousness analysis is to identify the scope and content of the prior art. Graham v. John Deere Co., 383 U.S. 1, 17, 86 S.Ct. 684, 693-94, 15 L.Ed.2d 545, 148 USPQ 459, 467 (1966). In other words, one must determine what art may be considered. Art that may be considered is called "analogous" while art that may not be considered is called "non-analogous." See In re Clay, 966 F.2d 656, 658, 23 USPQ2d 1058 (Fed. Cir. 1992). Whether a reference is analogous is a question of fact. Id.

switch fails, then the blade will continue to move forward without stopping until it contacts the rod supporting the roll. If that contact occurs, an electric current will flow between the blade and the rod to signal the blade to move back and/or stop. Terauchi uses a motor to turn a screw to move the blade forward and back and it uses an electromagnetic brake to stop the rotation of the blade. (Terauchi, columns 2 & 3.)

The Federal Circuit has identified two criteria for determining whether a reference is analogous art. The first is whether the reference is from the same field of endeavor as applicant's invention. If it is, then the reference is analogous. If it is not, then the second criterion must be considered. The second criterion is whether the reference is reasonably pertinent to the particular problem addressed by the inventor.

The Federal Circuit applied these criteria in the case of In re Clay, 966 F.2d 656, 658, 23 USPQ2d 1058 (Fed. Cir. 1992). In that case, the Federal Circuit reversed a rejection of claims to a process for storing liquid hydrocarbon in a tank having a dead volume between the bottom of the tank and its outlet. Id. at 657. The process included the step of placing gel in the dead volume. The claims were rejected in light of two references: Hetherington, which disclosed a petroleum storage tank that used bladders to fill the dead space at the bottom of the tank, and Sydansk, which taught using gel to fill anomalies in underground petroleum formations. Clay argued that Sydansk should not be considered because it was non-analogous art. The Board of Patent Appeals and Interferences, however, ruled that Sydansk was in the same field of endeavor, and therefore analogous, because the gel disclosed in Sydansk "would have a number of applications within the manipulation of the storage and processing of hydrocarbon

liquids ... [and that] the gel as taught in Sydansk would be expected to function in a similar manner as the bladders in the Hetherington patent." Id. at 659.

Clay then appealed to the Federal Circuit. The first question addressed by the Federal Circuit was whether Sydansk was in the same field of endeavor as Clay. The court ruled that it was not, saying: "Sydansk cannot be considered to be within Clay's field of endeavor merely because both relate to the petroleum industry." Id. The court explained that Sydansk dealt with underground formations while Clay dealt with man-made storage tanks, and Sydansk's invention operated at high temperatures and pressures while Clay's invention operated at ambient temperature and atmospheric pressure. Because of these differences, the court ruled that the two references were from different fields of endeavor: "Clay's field of endeavor is the *storage* of refined liquid hydrocarbons. The field of endeavor of Sydansk's invention, on the other hand is the *extraction* of crude petroleum. The Board clearly erred in considering Sydansk to be within the same field of endeavor as Clay's." Id. (emphasis in original).

The Federal Circuit then considered the second criterion, whether Sydansk was reasonably pertinent to the problem addressed by Clay, and stated:

> A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. Thus, the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it. (Id. at 659)

The Federal Circuit applied that standard and explained that the purpose of Clay's invention was to displace liquid from dead spaces in a storage tank while the purpose of Sydansk's invention was to recover oil from rock. The court also explained that a subterranean formation "is not structurally similar to, does not operate under the same temperature and pressure as, and does not function like Clay's storage tanks." Id. at 660. Because of these differences the court concluded that Sydansk was not reasonably pertinent to the problem addressed by Clay, and therefore, Sydansk was non-analogous and should not have been considered.

The situation in Clay is similar to the case at hand. Applicant's field of endeavor is woodworking machinery while Terauchi's field of endeavor is textile slitting. (Terauchi, column 1, lines 6-17.) Woodworking machines are not used to slit textiles, and textile slitters are not used to cut wood. Woodworking machines and textile slitters operate differently. For example, in a woodworking machine as described in applicant's claims, a person typically holds a workpiece in a cutting zone and then moves the blade into contact with the workpiece to make a cut. In a textile slitter, a roll of cloth is held by a rod and rotated while a blade moves automatically to slit the roll. An operator is not required to hold the roll or move the blade into contact with the cloth. Thus, woodworking machines and textile slitters operate under different principles, serve different purposes, and require different manners of operation. The differences between these fields are similar in scope to the differences between the fields of storing and extracting petroleum described in Clay, and as a result, applicant's invention and Terauchi are from different fields of endeavor. Thus, the question becomes whether Terauchi is reasonably pertinent to the problem addressed by applicant.

Terauchi is not reasonably pertinent to the problem addressed by applicant because Terauchi's textile slitter would not have commended itself to an inventor considering how to detect contact between a person and a cutting tool. Terauchi addresses a different purpose, namely, how stop or retract a cutting blade "when the rotary cutting blade contacts the guide holder rod." (Terauchi, column 1, lines 15-17.) Nowhere does Terauchi discuss how to detect contact with a person. Contact between a person and a blade is different than contact between a guide rod and a blade. Contact with a person typically results in a severe injury while contact with a guide rod is simply a mechanical malfunction. Moreover, the electrical properties of a person are different than the electrical properties of a metal guide rod, and as a result, detecting contact with a person is different and more difficult than detecting contact with a guide rod. Terauchi's system to detect contact with the guide rod would not work to detect contact with a person because of these differences.

Terauchi also would not have commended itself to an inventor considering how to make woodworking machines safer because woodworking machines and textile slitters present different dangers. In a woodworking machine as described in applicant's claims, a user typically holds the workpiece and moves the blade into contact with the workpiece to make a cut. If the user's hand is misplaced, if the blade unexpectedly climbs over the workpiece, or if the blade causes the workpiece to shift, then the blade could contact the user's hand and cause a severe injury. In a textile slitter, however, a user does not hold the cloth or move the blade, so it does not present the same danger.

Another reason Terauchi would not have commended itself to an inventor considering how to make woodworking machines safer is because the entire structure

of Terauchi's textile slitter is different than a woodworking machine. The slitter includes a guide rod, as explained. The cloth is rolled on a tube and the tube is slid onto the rod. The cloth is then rotated on the rod by a chuck and motor. A toothless blade is supported by a carriage and a ball screw is rotated to move the blade into contact with the cloth. (Terauchi, column 2, lines 4-25.) None of this structure is in a woodworking machine as recited in applicant's claims.

In Clay, the Federal Circuit ruled that differences in purpose, structure, and operation between petroleum storage tanks and petroleum extraction methods resulted in petroleum extraction being a non-analogous art. In the case at hand, comparable if not more significant differences between woodworking machines and textile slitters show that textile slitters are non-analogous. Textile slitters address a different problem, present different dangers, and are constructed differently than woodworking machines, as explained. These differences are at least as significant as the differences in Clay.

Another relevant case is In re Pagliaro, 657 F.2d 1219, 210 USPQ 888 (CCPA 1981). The invention in that case involved a process for preparing decaffeinated beverages. The invention used edible fats to extract the caffeine while the prior art used potentially toxic solvents. Id. at 1220. The examiner rejected the claims as obvious in light of a patent to Nutting combined with either a patent to Rector or an article by Aeillo. Nutting taught the conventional process of using solvents. Id. at 1221. Rector disclosed a method of making coffee by grinding coffee beans with oil and then extracting the oil, and Rector said the extracted oil was more heavily charged with the stimulative elements of the coffee. Id. Aeillo discussed the lipoid theory of narcotics, and

specifically, the solubility of narcotics in fatty oils. Id. at 1221-1222. The Board of Patent Appeals and Interferences affirmed the rejection and Pagliaro appealed.

On appeal, the Court of Customs and Patent Appeals reversed the rejection because the Board misinterpreted Rector and because Aeillo was a non-analogous reference. The court's discussion of Aeillo is particularly relevant to the case at hand. The court explained:

> We regard Aeillo as nonanalogous art, which cannot properly be considered pertinent prior art under 35 U.S.C. 103. In In re Wood, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (Cust. & Pat. App.1979), this court stated: "In resolving the question of obviousness under 35 U.S.C. § 103, we presume full knowledge by the inventor of all the prior art in the field of his endeavor. However, with regard to prior art outside the field of his endeavor, we only presume knowledge from those arts reasonably pertinent to the particular problem with which the inventor was involved. (Citation omitted.) The rationale behind this rule precluding rejections based on combination of teachings of references from nonanalogous arts is the realization that an inventor could not possibly be aware of every teaching in every art. Thus, we attempt to more closely approximate the reality of the circumstances surrounding the making of an invention by only presuming knowledge by the inventor of prior art in the field of his endeavor and in analogous arts."
>
> The determination that a reference is from a nonanalogous art is therefore twofold. First, we decide if the reference is within the field of the inventor's endeavor. If it is not, we proceed to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved.
>
> Both the instant claims and Nutting involve decaffeination of vegetable materials; whereas, Aeillo compares the solubility of a diuretic solution, such as a caffeine solution combined with an oil/serum mixture, to the same solution combined with an oil/water mixture. He determines that caffeine is "more soluble in serum than in water." From this he concludes that the Meyer/Overton lipoid theory of narcotics, which was based upon experiments using an oil/water mixture, is inaccurate because an oil/water mixture does not approximate the substances found in the human body. Thus, Aeillo's disclosure is not "within the field of the inventor's endeavor." Further, Aeillo is not pertinent to appellants' problem because he is not concerned with either beverage preparation or decaffeination of vegetable materials. There is no common environment which could form a "close

> relationship" between either the claimed invention or Nutting on the one hand and Aeillo on the other to logically require consideration of Aeillo. In re Antle, 58 CCPA 1382, 1387, 444 F.2d 1168, 1171-72, 170 USPQ 285, 287-88 (1971). An earlier statement by this court in In re Van Wanderham, 54 CCPA 1487, 1494, 378 F.2d 981, 988, 154 USPQ 20, 25 (1967), is particularly appropriate: "Our determination here is not without difficulty. However, we think the difficulty arises from not considering the subject matter as a whole and instead focusing on the scientific principle involved ...."
>
> In this case, the board erred by focusing on the affinity of olive oil for caffeine without considering the subject matter of Aeillo as a whole and the impropriety of the Aeillo reference, as pointed out above. (Pagliaro, 657 F.2d at 1224-1225.)

In the case at hand, Terauchi is not pertinent to applicant's claims because Terauchi is not concerned with woodworking machines or stopping the motion of a blade upon detection of contact with a person, just as in Pagliaro the Aeillo reference was not pertinent because it did not concern beverage preparation or decaffeination of vegetable materials. There simply is no "common environment" or "close relationship" between a woodworking machine as claimed by applicant and a textile slitter as disclosed by Terauchi, just as there was no "common environment" or "close relationship" between decaffeinating beverages and the solubility of a caffeine solution in Pagliaro. Also, the examiner in the case at hand did not consider Terauchi as a whole, just at the Board in Pagliaro did not consider the Aeillo reference as a whole. Instead, the examiner focused on the single fact that Terauchi disclosed a blade that would retract if it contacted a guide rod. (Office Action mailed 8/25/05, pp. 3-4.) However, when Terauchi is considered as a whole, one sees that a textile slitter addresses a different problem, presents different dangers, has a different structure, and operates differently than a woodworking machine as set forth in applicant's claims.

Because of these differences, Terauchi is not reasonably pertinent to applicant's invention just as Aelllo was not reasonably pertinent in Pagliaro.

2. There is no suggestion to combine Terauchi with the other references.

Even if Terauchi were analogous art, it still would not have been obvious to combine Terauchi with Suzuki or Brundage and Lokey or Friemann because there is no suggestion to make the combination. The examiner did not identify any specific understanding or technological principle that would motivate a person of ordinary skill to combine Terauchi with the other cited references. Instead, the examiner simply said, as he did concerning the combination of Gaines, Lokey and Friemann discussed previously, that it would have been obvious to combine the references "to prevent further injury to the user." (Office Action mailed 8/25/05, p. 4.) Such a rote statement does not explain why a person of ordinary skill would make the combination, as explained previously.

Additionally, modifying the miter saw of Suzuki or Brundage to include a retraction mechanism as disclosed in Terauchi and a detection system as described in Lokey or Friemann, if it could be done, would require a substantial redesign and reconstruction of the miter saw. Terauchi's retraction system requires limit switches, a grounded metal guide rod, and a motor driven screw to move the blade back when a limit switch is tripped or when the blade contacts the guide rod. A miter saw as disclosed in Suzuki or Brundage, however, does not include those elements, and as a result, would have to be redesigned to incorporate them or something like them. Additionally, the textile slitter disclosed in Terauchi would have to be redesigned to incorporate a detection system as disclosed in Lokey or Friemann. Thus, at the very

least, the suggested combination would require a substantial redesign and reconstruction of the miter saw disclosed in Suzuki or Brundage as well as a redesign and reconstruction of the detection and reaction systems disclosed in Terauchi. The required redesign and reconstruction supports the conclusion that the prior art fails to suggest the combination. In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (CCPA 1959).

3. There is no reasonable expectation that the miter saw of Suzuki or Brundage could be successfully combined with Terauchi.

There must be a reasonable likelihood that the suggested combination of prior art teachings would succeed in order to support an obviousness rejection. In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ2d (Fed. Cir. 1988); see also MPEP 2143.02 ("Reasonable Expectation of Success Is Required"). An obviousness rejection cannot stand without that expectation. Id.

In the case at hand, however, there is little or no likelihood that the miter saw of Suzuki or Brundage could be modified to include a retraction system like the one used in Terauchi's textile slitter because of differences between the structure and operation of the two devices. For example, a miter saw is operated by hand - a user pivots a blade down onto a workpiece to make a cut. Terauchi's textile slitter, in contrast, operates automatically - a motor turns a screw which moves a blade toward or away from a roll of cloth. The motor and screw of Terauchi could not be incorporated into the miter saw of Suzuki or Brundage without changing how the miter saw functions.

B. Claim 17.

Claim 17 was rejected under 35 USC 103(a) as obvious in light of Suzuki or Brundage combined with Gaines or Terauchi and Lokey or Friemann. Claim 17 describes a woodworking machine with a base configured to rest on a surface, a work surface supported by the base, a work zone adjacent the work surface, a blade adapted to move into the work zone to cut a workpiece, a detection system adapted to detect contact between a person and the blade, and "a reaction system adapted to limit movement of the blade into the work zone upon the detection of the contact." None of the cited references disclose a reaction system that works "upon the detection of contact," as explained. Terauchi is non-analogous art, there is no suggestion to combine the cited references, and there is no reasonable expectation that the proffered combination would work, as explained. Therefore, the rejection of claim 17 should be reversed.

C. Claim 18.

Claim 18 also was rejected under 35 USC 103(a) as obvious in light of Suzuki or Brundage combined with Gaines or Terauchi and Lokey or Friemann. Claim 18 depends from claim 17 and is not obvious for the same reasons as claim 17. Claim 18 also specifies that the woodworking machine is a miter saw having a support arm, a blade mounted for rotation on the support arm, and a reaction system adapted to limit movement of the blade into a work zone, "where the reaction system includes a pawl to engage the blade to limit the movement of the blade into the work zone when the pawl engages the blade." The examiner said claim 18 is obvious without any discussion of the claim. Specifically, the examiner failed to explain where the prior art disclosed a

pawl as specified. (Office Action mailed 8/25/05, pp. 3, 4.) As a result, the examiner has not set forth any support for his rejection of claim 18, and therefore, the rejection should be reversed.

8. Claims appendix.

1. A woodworking machine comprising:

a support structure having a cutting zone;

a cutting tool supported by the support structure and adapted to move at least partially into the cutting zone to cut a workpiece;

a motor adapted to drive the cutting tool;

a detection system adapted to detect contact between a person and the cutting tool; and

a reaction system adapted to stop motion of the cutting tool into the cutting zone upon detection of contact between a person and the cutting tool by the detection system.

2. The machine of claim 1, where the motor rotates the cutting tool as the cutting tool moves at least partially into the cutting zone, and where the reaction system is adapted to stop the rotation of the cutting tool.

3. The machine of claim 2, where the reaction system includes a first brake mechanism adapted to stop the movement of the cutting tool into the cutting zone, and a second brake mechanism adapted to stop the rotation of the cutting tool.

4. The machine of claim 1, further comprising operative structure adapted to couple the cutting tool to the support structure, where the operative structure is selectively movable relative to the support structure to move the cutting tool into the cutting zone, and where the reaction system is adapted to stop movement of the operative structure relative to the support structure upon detection of contact between a person and the cutting tool by the detection system.

7. A woodworking machine comprising:

a cutter adapted to move translationally relative to a workpiece to be cut;

a detection system adapted to detect contact between a person and the cutter; and

a reaction system adapted to interrupt the translational movement of the cutter upon the detection of contact between the person and the cutter by the detection system.

9. The woodworking machine of claim 7, where the cutter is adapted to rotate, and further comprising a brake system to stop the rotation of the cutter upon the detection of contact between the person and the cutter by the detection system

17. A woodworking machine comprising:

a base configured to rest on a generally horizontal surface to support the machine during operation;

a work surface supported by the base above the generally horizontal surface on which a workpiece may be cut;

a work zone adjacent the work surface;

a blade adapted to move into the work zone to cut the workpiece;

a motor to drive the blade;

a detection system adapted to detect contact between a person and the blade; and

a reaction system adapted to limit movement of the blade into the work zone upon the detection of the contact.

18. The woodworking machine of claim 17, where the woodworking machine is a miter saw, and further comprising a support arm moveable relative to the base, where the blade is mounted for rotation on the support arm, and where the reaction system includes a pawl to engage the blade to limit the movement of the blade into the work zone when the pawl engages the blade.

19. The miter saw of claim 18, further comprising a pivot joint between the support arm and base and adapted to allow the support arm to pivot relative to the base, where the blade has a rotational axis, where the blade has a front portion defined as that portion beyond the rotational axis away from the pivot joint, and where the pawl is adapted to engage the blade at a position on the front portion of the blade.

20. The woodworking machine of claim 1, where the machine is a radial arm saw and the cutting tool is a circular blade.

21. The radial arm saw of claim 20, where the support structure includes an arm and a bracket configured to slide along the arm, and where the reaction system includes a wedge assembly configured to interrupt the sliding of the bracket along the arm.

22. The radial arm saw of claim 21, where the support structure includes an arm and a bracket configured to slide along the arm, and where the reaction system includes a lockable spool assembly configured to interrupt the sliding of the bracket along the arm.

23. The woodworking machine of claim 1, where the machine is a miter saw and the cutting tool is a circular blade.

9. Evidence appendix.

None.

10. Related proceedings appendix.

None.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this Appeal Brief (Amended 4-18-06) is being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office to number (571) 273-8300, on the date shown below.

Date: April 18, 2006

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